



REPREVE RENEWABLES

**Mechanical planting & alternative
uses in the “Miscanthus Field”**

Mr. Travis Hedrick
CEO
Repreve Renewables



BUSINESS MODEL



PRODUCT SALES



SUPPLY CHAIN



MANAGEMENT



SERVICES



LAND PROCURMENT /
PROJECT DEVELOPMENT



GENETICS / IP

*Our vertically integrated business model enables us to **connect fields of biomass to the end use markets**. We provide foundation rhizome stock, procures land, plants the crop, provides agronomic services to maximize productivity, harvests and develops markets to sell the biomass. This vertically integrated approach **creates value for each partner**, from landowner to services companies to end customers.*

WHY GIANT MISCANTHUS?



SOCIAL

- ✓ **Highly Efficient Non-Food Crop**
 - Perennial Grass: Plant once, stand lasting over 20 years.
 - Minimal nutrient, water and herbicide/pesticide requirements.
 - Heat and drought tolerant.
- ✓ **New market opportunities**
 - Creates jobs for the bio-economy.
- ✓ **Alternative for marginal and under-utilized land**

ENVIRONMENTAL

- ✓ **Reduced Carbon Footprint**
 - Removes 50% more carbon from the atmosphere and sequesters 94% more carbon in the soil than a pine plantation per acre per year.
- ✓ **Soil Quality**
 - Miscanthus ecosystems contain 67% more soil organic carbon than traditional row crop ecosystems.
- ✓ **Water Quality**
 - 90% reduction in Nitrate leaching vs traditional row crop ecosystems.
 - 30-60% decrease in soil erosion vs traditional row crop ecosystems.

ECONOMIC

- ✓ **Price Stability**
 - Long term stable feedstock cost for customers.
 - Stable returns for growers/landowners.
- ✓ **Desirable Feedstock**
 - Mature yields can range from 8 – 14 bone dry tons per acre. Three times more biomass per acre than pine plantation.
 - Consistent composition. Low moisture, highly absorbent, low ash and mineral content.
 - More than 2x achievable ethanol and MMBTU per acre compared to corn.

TECHNOLOGY



A patented agricultural system developed to commercial plant and produce sustainably grown plant based fibers.

ACCU Lifter™



ACCU Processor™



ACCU Drop™ Planter



Performance

VALIDATION

University of Iowa's recent selection of Reprevé Renewables as its ag service and business provider for its renewable Biomass Fuel Project

Recipient of the **USDA's** Biomass Crop Assistance Program Project 11

Thousands of acres in production in **7 states** serving various markets

Cost



GIANT MISCANTHUS PRODUCTION

Rapid Renewable Crop - Harvest first winter after planting



Planting: YR1 Only
Feb - May



Emergence: YR1
Re-Growth: YR 2-15+
Mar - Apr



Growth:
Apr - Sep



Dormancy:
Oct - Dec

8 - 10
months
annually



Harvest:
Nov - April



Loading and Transport



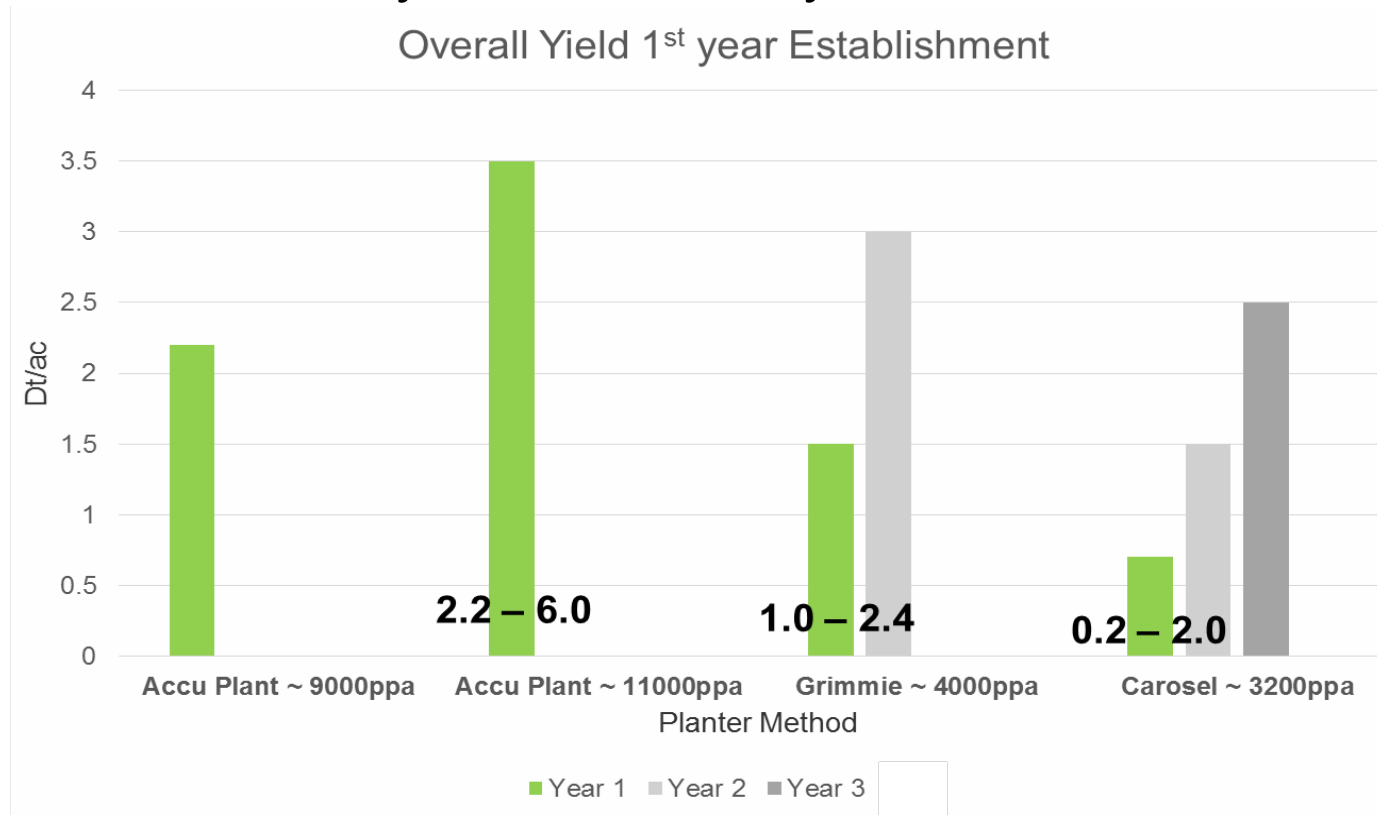
Storage / Handling



Combustion
All season

KEY IMPROVEMENTS FROM

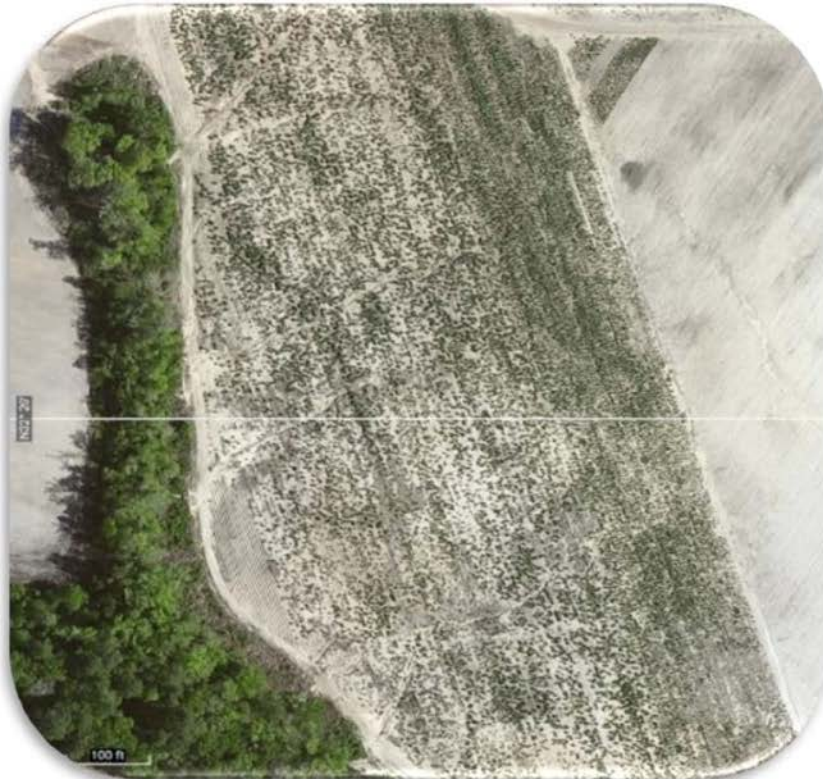
- Improved stand density with 90+% of acres planted reaching targeted plant population
- Reduced herbicide and weed management requirements
- ACCU increases 1st year dt harvest yields 250 to 580%



Visible stand establishment improvement using the ACCU YIELD System

Location: Soperton, GA (Middle Ga)

- Planted April 2010
- Stand age: 1 yr, (April 2011)
- Targeted ppa: 4840
- Actual ppa: 1936
- Spacing: 36²x36"
- % Establishment: 40%



Location: Dunn, NC (East Central NC)

- Planted: March 2013
- Stand age at photo: 4 months (July 2013)
- Targeted PPA: 13382
- Actual PPA: 11643
- Spacing: 18²x26"
- % Establishment: 87%



PRODUCTION RESULTS



WHATS NEEDED TO DRIVE MISCANTHUS PRODUCTION?



INTRODUCING MISCANTHUS FIBER POULTRY BEDDING

Repreve Renewables, created a purpose-designed bedding product for the poultry industry. Miscanthus fiber is setting a new standard. It is a high quality, custom produced natural and renewable poultry bedding product made from the companies patented giant miscanthus varieties.

Growers and integrators realize better bedding means better birds, and better birds lead to better profits, making *Miscanthus Fiber The One to Grow On*.



Miscanthus BioFuel

The University of Iowa's 2020 goal of 40 percent renewable energy at a **price competitive with current fossil fuel supplies**. A dedicated energy crop, *Miscanthus x giganteus* will be established on 2,500 acres in Iowa to produce 22,500 tons of **sustainable and renewable biopower feedstock** to replace a portion of the University's coal supply. The project employs two solid fuel furnaces at the main University of Iowa power plant and one solid fuel furnace at the UI research park to burn the co-blended fuel. The project will create new jobs while improving the environment.



Miscanthus BioProduct Pipeline

PACKAGED ANIMAL BEDDING



NATURAL ABSORBENTS

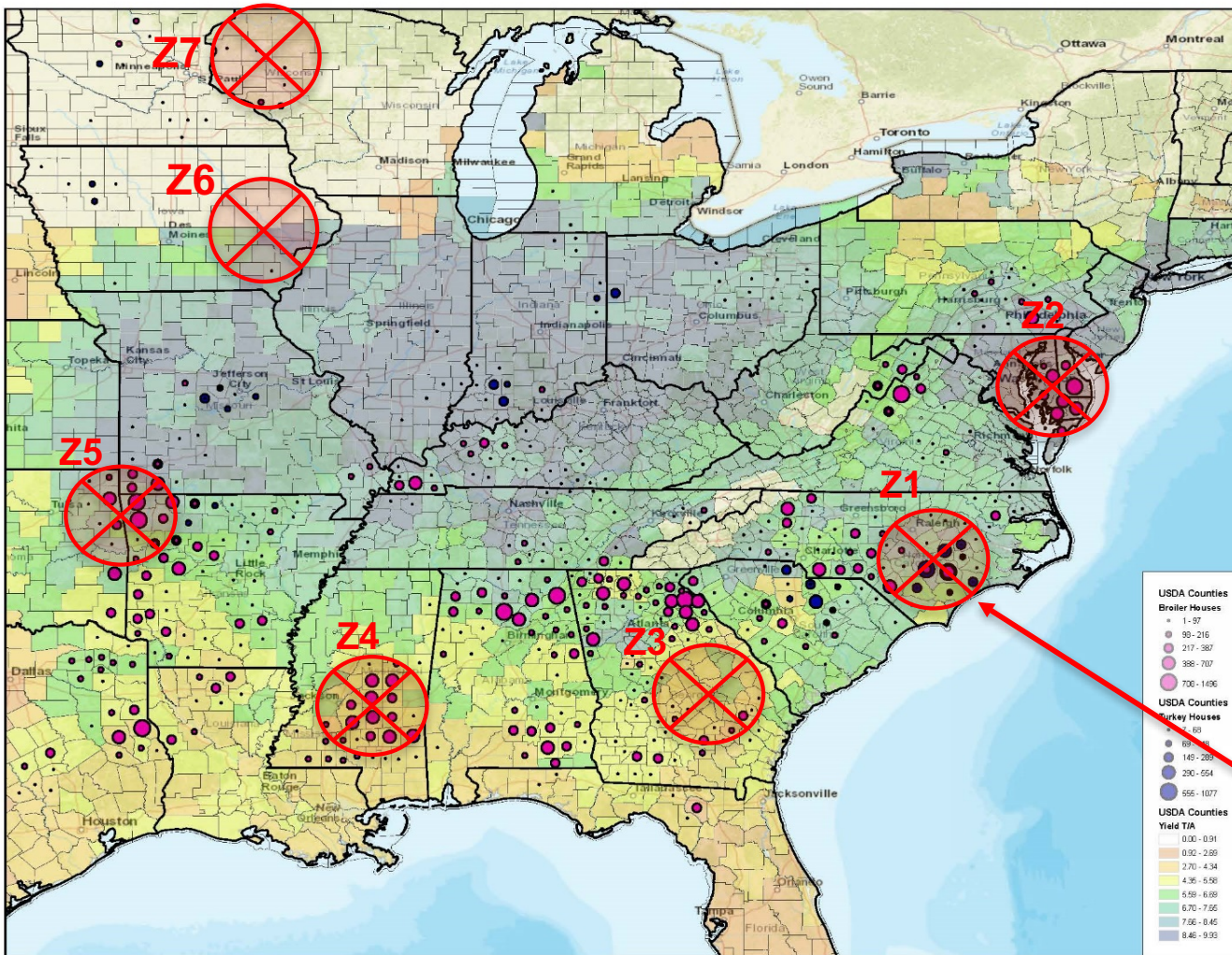


EROSION CONTROL SOLUTION



COMMERICAL PROGRESS

Repreve Renewable Farm Locations



Location	State
Zone 1	Eastern NC
Zone 2	Maryland, Virginia, Delaware
Zone 3	South Georgia
Zone 4	Mississippi
Zone 5	Arkansas, Missouri, Oklahoma
Zone 6	Iowa
Zone 7	Wisconsin, Minnesota,

PROCESSING CENTER



COMMERICAL PROGRESS

Supply a market ready poultry bedding product (**Status: Complete**)

- Establish regional nursery farms for future regional commercial scaling (NC, GA, OK, MS, WI and MD)
- Drive regional product adoption through testing (**3 turkey** and **13 chicken** integrators representing over **80% of the U.S. market across 7 six states** with commercial trials (**100% of trial material purchased**)



Commercial Launch of AGgrow Tech (**Status: Underway**)

- Project Area 1: Eastern Region
 - Regional operation center complete
 - Supply commitments in place
 - Secure land through long term leases (10 year)
 - Develop supply chain partnerships
 - Establish miscanthus fiber production

Eastern Region Operation Center Completed



Production Expansion (**Status: Underway**)

- Expanding new production acres in spring of 2017
- Developing supply commitments in new market areas

Research and Development (**Status: Underway**)

- Developing new products in markets including erosion control, absorbents and retail.



Thank You

Please Visit Us in the Future at

www.aggrowtech.com

www.aggrowbedding.com

